PDR RID Report

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Review CSMS
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Priority 2

Category Name Design-MSS
Actionee HAIS
Sub Category
Subject Limited Scope of Fault Management Service

Description of Problem or Suggestion:

The Fault Management Application Service does not deal with faults unless the system detects a change in the state of a managed object. There is no concept or capabilities described to record and manage fault information reported by external systems & users (i.e. trouble ticket capability). As a result, this service appears too limited to support the M&O staff. By only dealing with a restricted set of "reportable" faults, the service supports a limited view of ECS fault management responsibilities. Network, Host and Peripheral faults may be provided by vendors, however service-level faults (e.g. those associated with ScientificALgorithms and ECS Applications) need to be defined by the service provider (e.g. developer/user) and instrumented in Applications. No characterization of the types of faults that will be reported can be found in the design documentation or data dictionary (i.e. no values for the attribute FaultType). The types of faults that will be associated with each managed object directly impacts the effort to populate the Fault class attributes as well as the effort to instrument applications of CSMS & other segments.
The implementation effort needed to provide a capability to analyze logs is underestimated. The Object Model section for fault management services states that the M&OStaffIF class is imported from the CMS MUI services, however there are capabilities need for effective fault analysis that may not be provided by the HP OpenView implementation of CMS. Review of specific error logs unique to a managed object instance (e.g. application specific logs, vendor specific logs) is an important capability needed by the M&O staff. The kinds of logs and the functionality of the analysis operation significantly impacts the development effort. We need to understand the M&O staff will be able to retrieve the platform-specific and application-specific logs from a host and sort logged errors by time and type. This capability is viewed as basic to UNIX system administration and will likely require implementations tailored to each managed object with a different vendor's platform hardware and software.
MgtDBSUserIF class identifies several operations that need further specification before accepting the service's implementation estimate. Parsing of specific managed object logs may be needed to support M&O staff operational system administration responsibilities. Capability to address specific variables in Managed Object log files is need for sorting by time and parameter, for displays and reports.

Originator's Recommendation

Identify what part of the ECS design will provide capabilities to track, analyze, isolate & recover from faults reported by external systems, operators, and users (i.e. those not identified as a change in state of a managed object). Describe the capabilities and identify the implementation method and characterize the development effort required to provide these capabilities. Indicate if there will be interfaces to the MSS Fault Management Application Service.
Define the types of faults that will be reportable for each managed object class. Indicate whether Fault attributes are defined by CSMS, other segments, and/or the M&O staff. Identify the conventions that other subsystem services will adhere to.
Characterize the implementation effort for populating the Fault class attributes in quantifiable terms such as lines of configuration data.
Describe the functional capabilities of class operations that support analysis of vendor-specific and application specific errors to determine cause of failure. Explain interactions with the M&OStaffIF class operations. Explain the approach for acquiring and incorporating vendor-specific and application specific error analysis methods. State the limitations or constraints. Characterize the implementation effort for each operation based on the types of managed objects.

GSFC Response by:
GSFC Response Date

HAIS Response by: Forman
HAIS Schedule
HAIS R. E. Y. Sastry
HAIS Response Date 5/2/95

The Fault Management Service deals with a wide variety of faults within the system, but provides the capability to configure the system such that every fault or error is not reported to the M&O staff in real time. Every fault that occurs within the system will be logged, with a pre-configured set resulting in a notification to an operator, (note that while a single event may be reported the combination or frequency of some errors or faults may result in a notification) this configuration is changeable at each site to support unique or desired operational considerations.

CSMS is currently working with SDPS and FOS in order to define the managed objects specific to ECS, their attributes and the events (including faults) associated with them. This activity will identify the faults that will be reportable by each class of managed object. While a pre-defined set of states will be defined for each managed object, reportable events regarding each object may be configured to be reported to an operator in real time. In a large an complex system such as ECS to display or generate an alert for every error within the system could quickly overwhelm an operator. By providing different levels of faults and a configurable response to individual and collection of events, the Fault Management Service supports real time operations, as well as post event analysis and isolation/resolution of faults.

COTS products that provide the capabilities to record and manage faults reported by external systems and users are currently being investigated and evaluated. Selection of a
specific product will be done by CDR. This product will be integrated with the Fault Management Service.

Trouble Ticketing was not originally planned for Release A, and therefore was not included in the Release A PDR documents. We are currently working on the detailed requirements and design of the Trouble Ticketing function and will provide updates to both DID 304 and DID 305 at CDR (in progress reviews are planned for mid June). In Release A, the tracking and recovery from external faults is provided through a combination of Office Automation (e.g., Email) and the Trouble Ticketing Package. Recovery from external system errors or outages will, to a large extent, be a manual process supported by the Trouble Ticketing and Email capabilities.

The capability to analyze log files is imported from the CMS Management Data Access Service. Retrieval of information from these logs will be provided in two forms; the first is from an integrated data base which provides summary and correlated data regarding specific managed objects and/or services. The second is through direct retrieval and "browsing" of the raw history log data. Retrieval by specific parameters will be support and the details of the implementation approach be provided by CDR.

Status **Closed** **Date Closed** **5/24/95** **Sponsor** **Broder**

****** **Attachment if any** ******